



Green Plains - Shenandoah

Date 04/05/2023

Quote # 2301117G

We are pleased to provide the following quotation.

Gilbert Industries will mobilize (2) 3-man site construction crews from Sparta, MO to your job site in Shenandoah, IA to fabricate the following:

**Item A: ( 2 ) 142,000 gal Refined Storage Tanks #1 & #2 per the following details.**

Material: 304 / 304L SS Dual Rated Materials unless noted otherwise.

Finish: Material Finish (Interior / Exterior) will be HRAP / HRAP  
Interior Tank Welds will be Buffed. Some discoloration & some weld ripple will remain.  
Exterior Tank Welds will be Wire Brushed to Remove Excess Slag & Spatter.

Tank Design: Tank is designed, fabricated, & tested referring to guidelines found within API 650, but not certified. Pressure: Atmospheric at 212° F, No X-Rays (Per Calcs), S.G.= 1.4, No C.A.

Top Head: 1/4" plate 148° included Angle Cone Head. Roof design does not meet Frangible Roof requirements.

Head Stiffeners: Stiffeners included to support top head.

Top Rim Angle: Top Head to Shell Connection will be reinforced with a SS 3 x 3 x 1/4 Angle (304)

Shell: 30 ' 0" ID x 30 ' 0" Sidewall; Lower Shell is 4'  1/4" plate, remainder 3/16" plate

Bottom Head: 3/16" plate Lap Welded with 1/2" per foot slope towards outlet.


Tank Support: Tank is equipped with ( 12 ) (304 S/S) x 12" High Anchor Chairs. Anchor bolts supplied by Others. Anchoring down of tank by others after tank fabrication is complete.

Side Manway: (1) 24" Tiona Betts 8329LCX Round Manway, with EPDM gasket

Top Manway: (1) 24" Tiona Betts 8329LCX Round Manway, with EPDM gasket 

Tank Nozzles: In accordance with customer Nozzle Schedule, including a nozzle for venting or pressure relief (vent device by others). (Any other valves or level sensing devices specific to this tank to be provided by others.) Center lined recessed outlet included.

Agitator: Agitator supplied and installed by others. Tank design and agitator support to be finalized once agitator loadings have been provided. Overall design will be exterior roof stiffeners with center agitator platform.

Baffles: (4) 30" wide by 28' tall 1/4" plate baffles 

Insulation: Insulation provided by others. Insulation supports included.

HTS: Please see option pricing below.

Top Rail: The full top tank perimeter is equipped with a galvanized OSHA handrail.

Stairs: (1) set of CS stairs for accessing tophead of one tank. Access to the other tank will be provided by a catwalk. Stair design to follow Gilbert Standard.

Catwalk: CS galvanized catwalk extending from one tank to the other with max distance of 12'.

Empty Weight: Tank weighs appx 55,336 lbs.

**Item A - Option Pricing 1: 48" tall band of 14 ga welded dimple jacket around lower shell.**

**Item A - Option Pricing 2: Refined Storage Tanks to be designed and fabricated with no agitator supports or baffles.**

**Item B: ( 3 ) 26,500 gal Scrap Tank per the following details.**

Material: 304 / 304L SS Dual Rated Materials unless noted otherwise.

Finish: Material Finish (Interior / Exterior) will be HRAP / HRAP  
Interior Tank Welds will be Buffed. Some discoloration & some weld ripple will remain.  
Exterior Tank Welds will be Wire Brushed to Remove Excess Slag & Spatter.

Tank Design: Tank is designed, fabricated, & tested referring to guidelines found within API 650, but not certified. Pressure: 5psig with 6" WC vacuum at 212° F, No X-Rays (Per Calcs), S.G.= 1.3, No C.A.

Top Head: 1/4" plate 150° included Angle Cone Head. Roof design does not meet Frangible Roof requirements.

Top Rim Angle: Top Head to Shell Connection will be reinforced with a SS 3 x 3 x 1/4 Angle (304)

Shell: 14' 0" ID x 20' 0" Sidewall; 1/4" plate


Bottom Head: 1/4" plate Lap Welded with 1/2" per foot slope towards outlet.

Tank Support: Tank is equipped with ( 10 ) (304 S/S) x 12" High Anchor Chairs. Anchor bolts supplied by Others. Anchoring down of tank by others after tank fabrication is complete.

Side Manway: (1) 24" Tiona Betts 8329LCX Round Manway, with EPDM gasket

Top Manway: (1) 24" Tiona Betts 8329LCX Round Manway, with EPDM gasket

Tank Nozzles: In accordance with customer Nozzle Schedule, including a nozzle for venting or pressure relief (vent device by others). (Any other valves or level sensing devices specific to this tank to be provided by others.) Center lined recessed outlet included.

Agitator: Agitator supplied and installed by others. Tank design and agitator support to be finalized once agitator loadings have been provided. ~~Overall design will be exterior roof stiffeners with center agitator platform.~~ 

Baffles: (4) 14" wide by 19'10" tall 1/4" plate baffles

Insulation: Insulation provided by others. Insulation supports included.

HTS: None

Top Rail: The full top tank perimeter is equipped with a galvanized OSHA handrail.

Ladder: None

Catwalk: None

Empty Weight: Tank weighs appx 18,080 lbs.

**Item C: ( 1 ) 20,800 gal CIP Tank per the following details. GI230002**

Material: 304 / 304L SS Dual Rated Materials unless noted otherwise.

Finish: Material Finish (Interior / Exterior) will be HRAP / HRAP  
Interior Tank Welds will be Buffed. Some discoloration & some weld ripple will remain.  
Exterior Tank Welds will be Wire Brushed to Remove Excess Slag & Spatter.

Tank Design: Tank is designed & fabricated referring to guidelines found within API 650, but not certified. Pressure: 10" WC at 212° F, No X-Rays (Per Calcs), S.G.= 1.1, No C.A.

Top Head: 3/16" plate 150° included Angle Cone Head. Roof design does not meet Frangible Roof requirements.

Top Rim Angle: Top Head to Shell Connection will be reinforced with a SS 3 x 3 x 1/4 Angle (304)

Shell: 13' 0" ID x 20' 0" Sidewall; 3/16" plate

Bottom Head: 3/16" plate Flat Lap Welded.

Tank Support: Tank is equipped with ( 8 ) (304 S/S) x 12" High Anchor Chairs. Anchor bolts supplied by Others. Anchoring down of tank by others after tank fabrication is complete.

Side Manway: (1) 24" Tiona Betts 8329LCX Round Manway, with EPDM gasket

Top Manway: (1) 24" Tiona Betts 8329LCX Round Manway, with EPDM gasket

Tank Nozzles: In accordance with customer Nozzle Schedule, including a nozzle for venting or pressure relief (vent device by others). (Any other valves or level sensing devices specific to this tank to be provided by others.)

Agitator: None

Baffles: None

Insulation: Insulation provided by others. Insulation supports included.

HTS: None

Top Rail: The full top tank perimeter is equipped with a galvanized OSHA handrail.

Ladder: None

Catwalk: None

Empty Weight: Tank weighs appx 11,480 lbs.

**Item D: ( 2 ) 10,500 gal Caustic Tanks per the following details.**

Material: 304 / 304L SS Dual Rated Materials unless noted otherwise.

Finish: Material Finish (Interior / Exterior) will be HRAP / HRAP  
Interior Tank Welds will be Buffed. Some discoloration & some weld ripple will remain.  
Exterior Tank Welds will be Wire Brushed to Remove Excess Slag & Spatter.

Tank Design: Tank is designed & fabricated referring to guidelines found within API 650, but not certified. Pressure: 10" WC at 150° F, No X-Rays (Per Calcs), S.G.= 1.0, No C.A.

Top Head: 3/16" plate 150° included Angle Cone Head. Roof design does not meet Frangible Roof requirements.

Top Rim Angle: Top Head to Shell Connection will be reinforced with a SS 3 x 3 x 1/4 Angle (304)

Shell: 10' 0" ID x 18' 0" Sidewall; 3/16" plate

Bottom Head: 3/16" plate Lap Welded with 1/2" per foot slope towards outlet.

Tank Support: Tank is equipped with ( 6 ) (304 S/S) x 12" High Anchor Chairs. Anchor bolts supplied by Others. Anchoring down of tank by others after tank fabrication is complete.

Side Manway: (1) 24" Tiona Betts 8329LCX Round Manway, with EPDM gasket

Top Manway: (1) 24" Tiona Betts 8329LCX Round Manway, with EPDM gasket

Tank Nozzles: In accordance with customer Nozzle Schedule, including a nozzle for venting or pressure relief (vent device by others). (Any other valves or level sensing devices specific to this tank to be provided by others.)

Agitator: None

Baffles: None

Insulation: Insulation provided by others. Insulation supports included.

HTS: None

Top Rail: The full top tank perimeter is equipped with a galvanized OSHA handrail.

Ladder: None

Catwalk: None

Empty Weight: Tank weighs appx 7,860 lbs.

**Item E: ( 1 ) 5,500 gal Process Condensate Tank per the following details.**

Material: 304 / 304L SS Dual Rated Materials unless noted otherwise.

Finish: Material Finish (Interior / Exterior) will be HRAP / HRAP  
Interior Tank Welds will be Buffed. Some discoloration & some weld ripple will remain.  
Exterior Tank Welds will be Wire Brushed to Remove Excess Slag & Spatter.

Tank Design: Tank is designed & fabricated referring to guidelines found within API 650, but not certified. Pressure: 10" WC at 150° F, No X-Rays (Per Calcs), S.G.= 1.0, No C.A.

Top Head: 3/16" plate 150° included Angle Cone Head. Roof design does not meet Frangible Roof requirements.

Top Rim Angle: Top Head to Shell Connection will be reinforced with a SS 3 x 3 x 1/4 Angle (304)

Shell: 8' 0" ID x 15' 0" Sidewall; 3/16" plate

Bottom Head: 3/16" plate Flat Lap Welded.

Tank Support: Tank is equipped with ( 6 ) (304 S/S) x 12" High Anchor Chairs. Anchor bolts supplied by Others. Anchoring down of tank by others after tank fabrication is complete.

Side Manway: (1) 24" Tiona Betts 8329LCX Round Manway, with EPDM gasket

Top Manway: None

Tank Nozzles: In accordance with customer Nozzle Schedule, including a nozzle for venting or pressure relief (vent device by others). (Any other valves or level sensing devices specific to this tank to be provided by others.)

Agitator: None

Baffles: None

Insulation: Insulation provided by others. Insulation supports included.

HTS: None

Top Rail: The full top tank perimeter is equipped with a galvanized OSHA handrail.

Ladder: None

Catwalk: None


Empty Weight: Tank weighs appx 5,430 lbs.

**Item F: ( 1 ) 750 gal Steam Condensate Tank Shop Fabricated per the following details.**

Material: 304 / 304L SS Dual Rated Materials unless noted otherwise.

Finish: Material Finish (Interior / Exterior) will be HRAP / HRAP  
Interior Tank Welds will be Buffed. Some discoloration & some weld ripple will remain.  
Exterior Tank Welds will be Wire Brushed to Remove Excess Slag & Spatter.

Tank Design: Tank is designed & fabricated referring to guidelines found within API 650, but not certified. Pressure: 10" WC at 225° F, No X-Rays (Per Calcs), S.G.= 1.0, No C.A.

Top Head: 3/16", Standard Flanged & Dished Head 

Top Rim Angle: None

Shell: 4' 0" ID x 8' 0" Sidewall; 3/16" plate

Bottom Head: 3/16", Standard Flanged & Dished Head

Tank Support: ( 4 ) 4" sch 40 Pipe Legs w/ Welded Base Plates, 304 SS with Weld Pads

Side Manway: (1) 24" Tiona Betts 8329LCX Round Manway, with EPDM gasket

Top Manway: None

Tank Nozzles: In accordance with customer Nozzle Schedule, including a nozzle for venting or pressure relief (vent device by others). (Any other valves or level sensing devices specific to this tank to be provided by others.)

Agitator: None

Baffles: None


Insulation: Insulation provided by others. Insulation supports included.

HTS: None  
Top Rail: None  
Ladder: None  
Catwalk: None  
Empty Weight: Tank weighs appx 1,775 lbs.

**Item G: ( 1 ) 3,600 gal Hot Water Tank Shop Fabricated per the following details.**

Material: 304 / 304L SS Dual Rated Materials unless noted otherwise.

Finish: Material Finish (Interior / Exterior) will be HRAP / HRAP  
Interior Tank Welds will be Buffed. Some discoloration & some weld ripple will remain.  
Exterior Tank Welds will be Wire Brushed to Remove Excess Slag & Spatter.

Tank Design: Tank is designed & fabricated referring to guidelines found within ASME, but not stamped. Pressure: MAWP TBD with 2.6 psig Vacuum at 210° F, No X-Rays (Per Calcs), S.G.= 1.0, No C.A. 

Top Head: 3/16", ASME Flanged & Dished Head

Top Rim Angle: None

Shell: 8' 0" ID x 9' 6" Sidewall; 3/16" plate

Bottom Head: 3/16", ASME Flanged & Dished Head

Tank Support: ( 4 ) 6" sch 40 Pipe Legs w/ Welded Base Plates, 304 SS with Weld Pads

Side Manway: (1) 24" Tiona Betts 8329LCX Round Manway, with EPDM gasket

Top Manway: None

Tank Nozzles: In accordance with customer Nozzle Schedule, including a nozzle for venting or pressure relief (vent device by others). (Any other valves or level sensing devices specific to this tank to be provided by others.)

Agitator: None

Baffles: None

Insulation: Insulation provided by others. Insulation supports included.

HTS: None

Top Rail: The full top tank perimeter is equipped with a galvanized OSHA handrail.

Ladder: None

Catwalk: None

Empty Weight: Tank weighs appx 4,540 lbs.

**Item H: ( 1 ) 2,658 gal Hot Water Reclaim Tank Shop Fabricated per the following details.**

Material: 304 / 304L SS Dual Rated Materials unless noted otherwise.

Finish: Material Finish (Interior / Exterior) will be HRAP / HRAP  
Interior Tank Welds will be Buffed. Some discoloration & some weld ripple will remain.  
Exterior Tank Welds will be Wire Brushed to Remove Excess Slag & Spatter.

Tank Design: Tank is designed & fabricated referring to guidelines found within ASME, but not stamped. Pressure: MAWP TBD with 2.6 psig Vacuum at 180° F, No X-Rays (Per Calcs), S.G.= 1.0, No C.A.

Top Head: 3/16", ASME Flanged & Dished Head

Top Rim Angle: None

Shell: 7' 0" ID x 8' 6" Sidewall; 3/16" plate

Bottom Head: 3/16", ASME Flanged & Dished Head

Tank Support: ( 4 ) 6" sch 40 Pipe Legs w/ Welded Base Plates, 304 SS with Weld Pads

Side Manway: (1) 24" Tiona Betts 8329LCX Round Manway, with EPDM gasket

Top Manway: None

Tank Nozzles: In accordance with customer Nozzle Schedule, including a nozzle for venting or pressure relief (vent device by others). (Any other valves or level sensing devices specific to this tank to be provided by others.)

Agitator: None

Baffles: None

Insulation: Insulation provided by others. Insulation supports included.

HTS: None

Top Rail: The full top tank perimeter is equipped with a galvanized OSHA handrail.

Ladder: None

Catwalk: None



Empty Weight: Tank weighs appx 3,720 lbs.

